Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-61. (Cancelled).

62. (Currently Amended) A microscope comprising:

a source for a homogeneously polarized input optical beam;

a polarization converter which produces an inhomogeneously polarized optical beam from the homogeneously polarized input optical beam; ~~and~~

a microscopic imaging system which captures an image of sample using the inhomogeneously polarized optical beam;

a first polarization beam splitter that splits the homogeneously polarized input optical beam into a first part and a second part;

a first phase shifter which shifts at least one portion of the first part of the input optical beam by a first phase;

a second phase shifter which shifts at least one portion of the second part of the input optical beam by substantially the first phase; and

a second polarization beam splitter which combines the phase shifted portion and substantially all other portions of the first part of the input optical beam with the phase shifted portion and substantially all other portions of the second part of the input optical beam to produce the inhomogeneously polarized optical beam.

63. (Cancelled).

64. (Currently Amended) The microscope as set forth in claim ~~63~~ 62 wherein the polarization converter further comprises a variable delay that delays the second part of the input optical beam a first period of time.

65. (Currently Amended) The microscope as set forth in claim ~~63~~ 62 wherein the polarization converter further comprises a first spatial filter connected to an input of the first polarization beam splitter.

66. (Currently Amended) The microscope as set forth in claim ~~63~~ 62 wherein the polarization converter further comprises a second spatial filter connected to an output of the second polarization beam splitter.

67-76.(Cancelled)

77. (Currently Amended) A method for microscopic scanning, the method comprising:

providing a homogeneously polarized input optical beam;

producing an inhomogeneously polarized optical beam from the input optical beam; ~~and~~

capturing a microscopic image using the inhomogeneously polarized optical beam;

splitting the input optical beam into a first part and a second part;

shifting at least one portion of the first part of the input optical beam by a first phase;

shifting at least one portion of the second part of the input optical beam by substantially the first phase; and

combining the phase shifted portion and substantially all other portions of the first part of the input optical beam with the phase shifted portion and substantially all other portions of the second part of the input optical beam to produce the inhomogeneously polarized optical beam.

78. (Cancelled).

79. (Currently Amended) The method as set forth in claim ~~78~~ 77 wherein the producing the inhomogeneously polarized optical beam further comprises delaying the second part of the input optical beam a first period of time.

80. (Currently Amended) The method as set forth in claim ~~78~~ 77 wherein the producing the inhomogeneously polarized optical beam further comprises spatial filtering the input optical beam.

81. (Currently Amended) The method as set forth in claim ~~78~~ 77 wherein the producing the inhomogeneously polarized optical beam further comprises spatially filtering the inhomogencously polarized optical beam.

82-87.(Cancelled).

88. (Previously Presented) The microscope as set forth in claim 62 wherein the inhomogeneously polarized optical beam produced by the polarization converter is substantially smooth and continuous.

89. (Cancelled).

90. (Previously Presented) The microscope as set forth in claim 88 wherein the inhomogeneously polarized optical beam produced by the polarization converter is a substantially radially, inhomogeneously polarized optical beam.

91. (Previously Presented) The method as set forth in claim 77 wherein the producing the inhomogeneously polarized optical beam further comprises producing an inhomogeneously polarized optical beam which is substantially smooth and continuous.

92. (Cancelled).

93. (Previously Presented) The method as set forth in claim 91 wherein the inhomogeneously polarized optical beam is a substantially radially, inhomogeneously polarized optical beam.